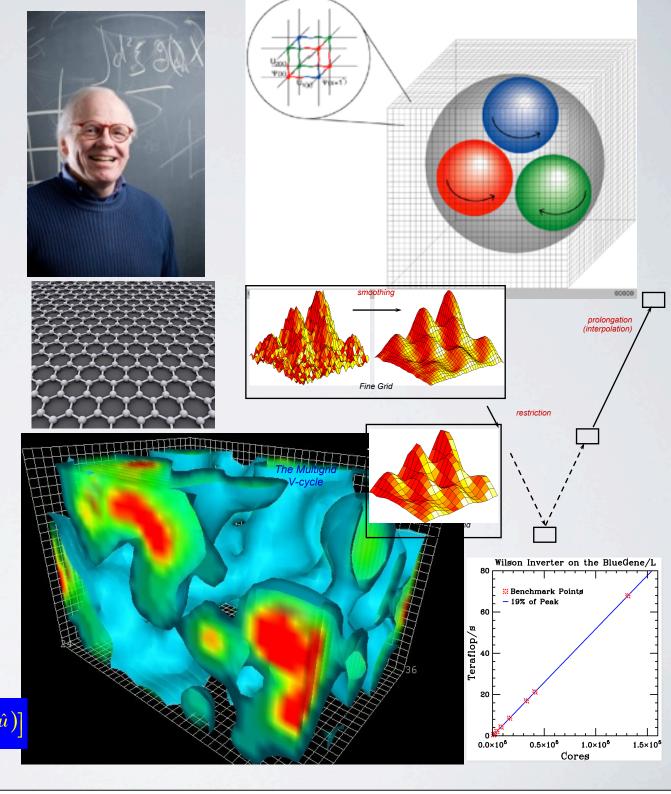
- Prof. Richard Brower theoretical physics
- SciDAC Software Coordinator & USQCD
 Exec Committee
- Background: String Theory,
 Quantum Field Theory, Stat Mech.
 Lattiice QCD
- Numerical Algorithms:
 Monte Carlo: Cluster methods,
 Linear Solvers: Multigrid, DD et
 Symplectic integrators: High order and multi-time step

 $D\psi(x) = \frac{1}{2a} \sum_{\mu} \left[U(x)\psi(x+\hat{\mu}) - U^{\dagger}(x-\hat{\mu})\psi(x-\hat{\mu}) \right]$



SciDAC Software API stack

Chroma = 4856 files

Application Layer

Chroma CPS MILC

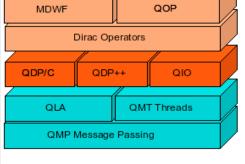
CPS = 1749 files

MILC = 2300 files

Level 3: Optimization

QLA/perl = 23000 files

.evel 2: Data Parallel



Level 1: Basics

Level 1: Basics

Tools

+ tools from collaborations with other SciDAC

QA0, GCC-BGL, Workflow, Viz.

QUDA/python = 221 files

- High Performance Computing from TMC to GPUs to Extreme Scales I hope!
- NEEDS: Tools for Heterogeneous computing. Early access to new hardware prototypes. Uniform environment for access to machines and file transfer, etc.

